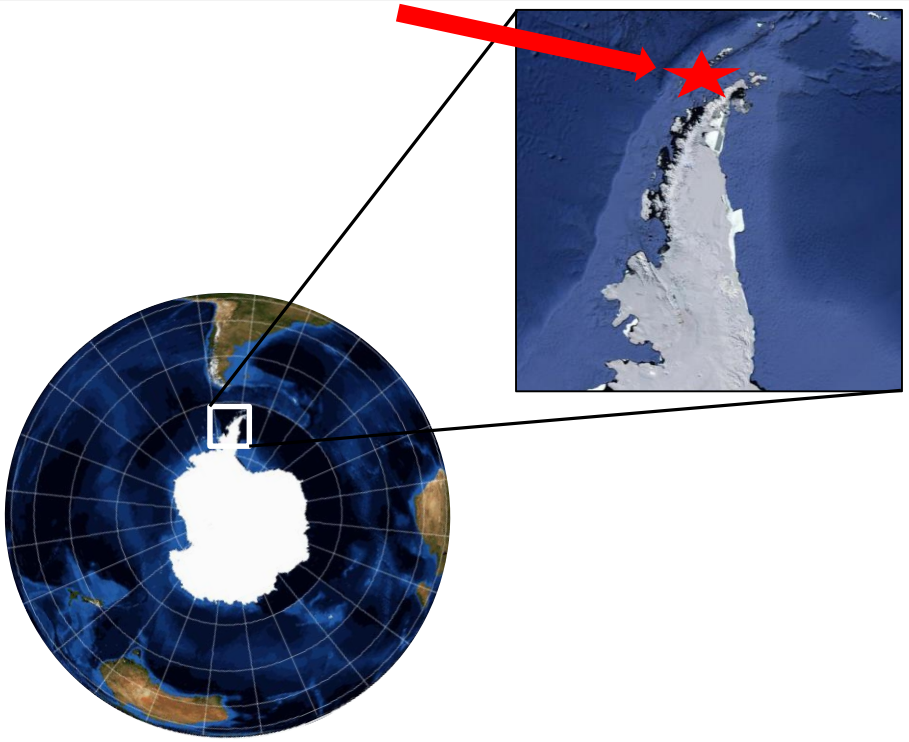
Leopard seals in focus: comparing the accuracy and precision of pinniped body size measurements between UAS photogrammetry and traditional ground-based methods

Douglas Krause, Jefferson Hinke,
Don Leroi, Mike Goebel and Wayne Perryman

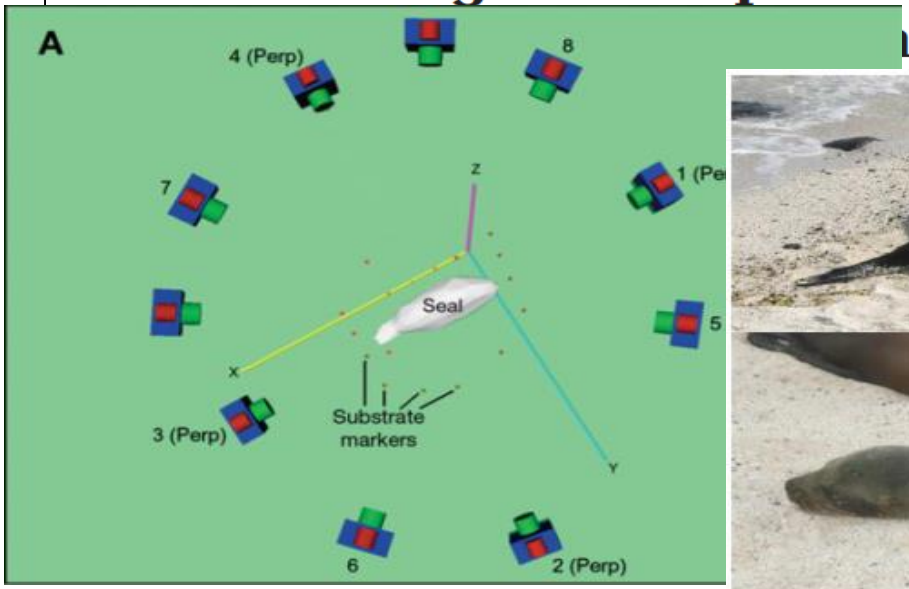
Study Site



Background

Background

How to weigh an elephant seal with one finger:
…al photogrammetric



e.g., Meise et al. 2014

Objectives and Methods

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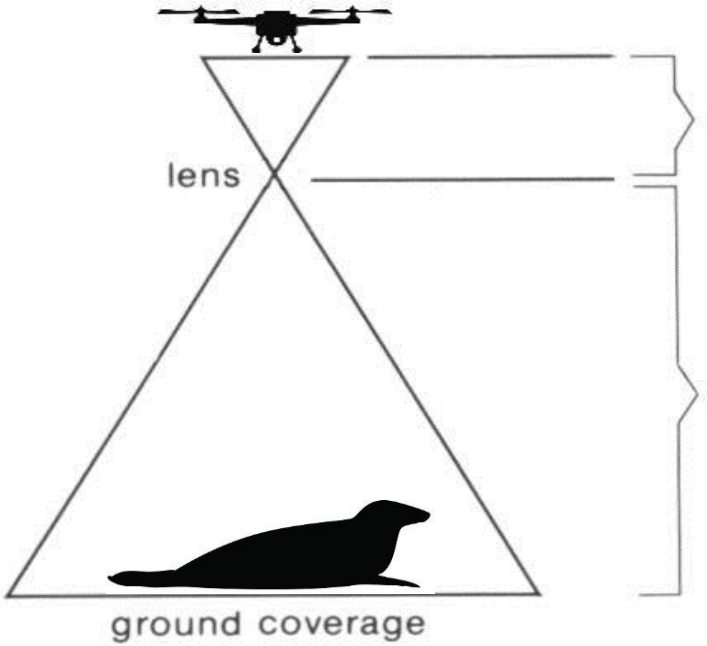
Methods



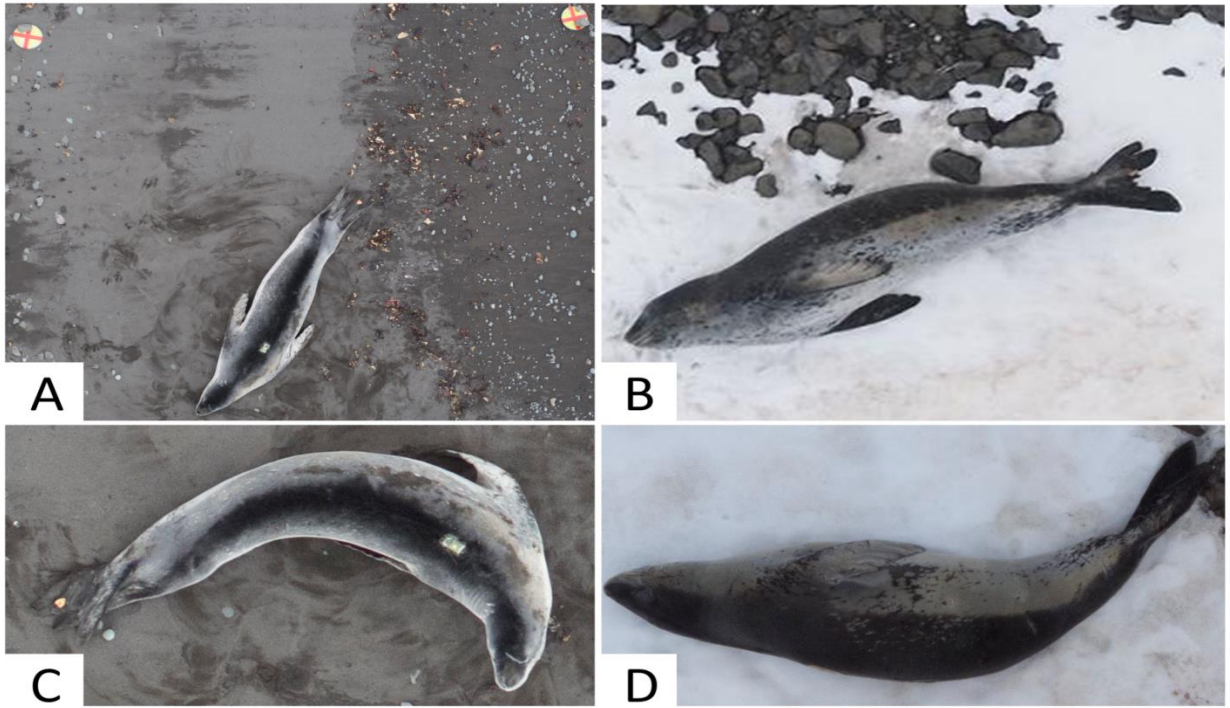
Focal length

Altitude

Methods

Pussini and Goebel 2015

Methods



Treatments N= 50
Mass N= 17

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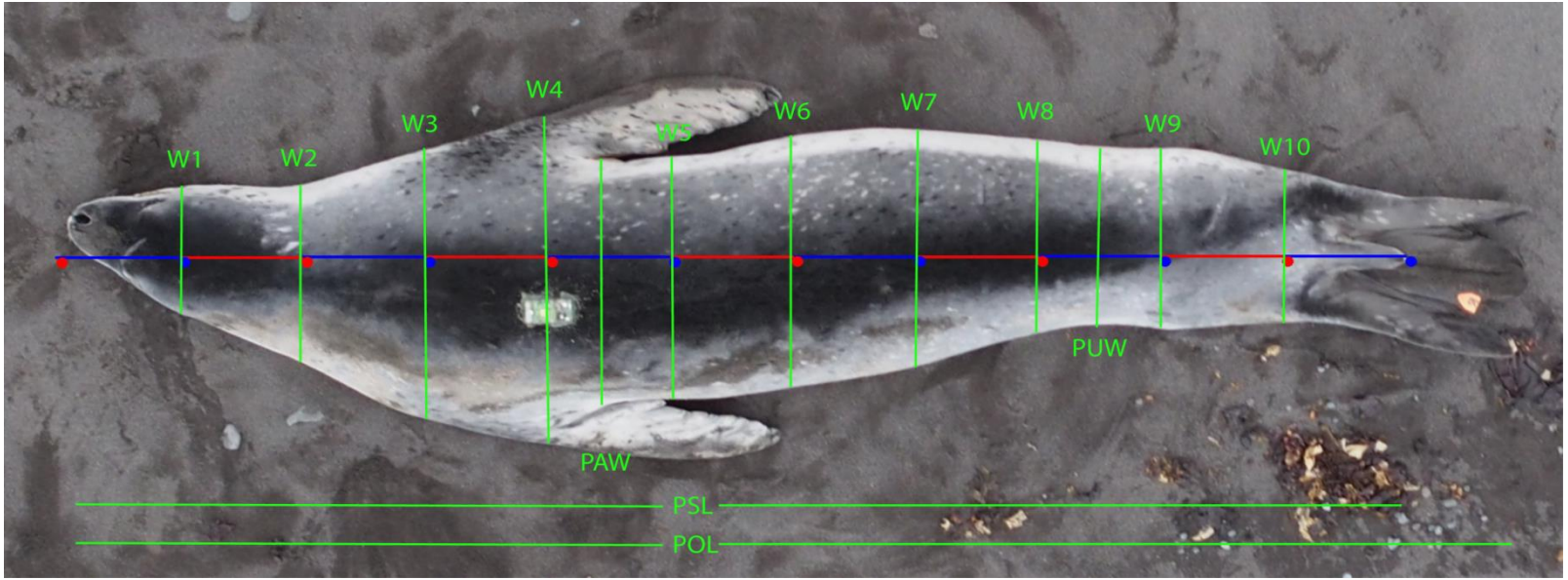
Methods



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Accuracy

Comparison	Difference?	Error
Aerial Versus Ground	No	2.01%
Among Altitudes	No	<2.08%
Among Body Position	No	<2.16%
Among Substrate	No	<2.15%

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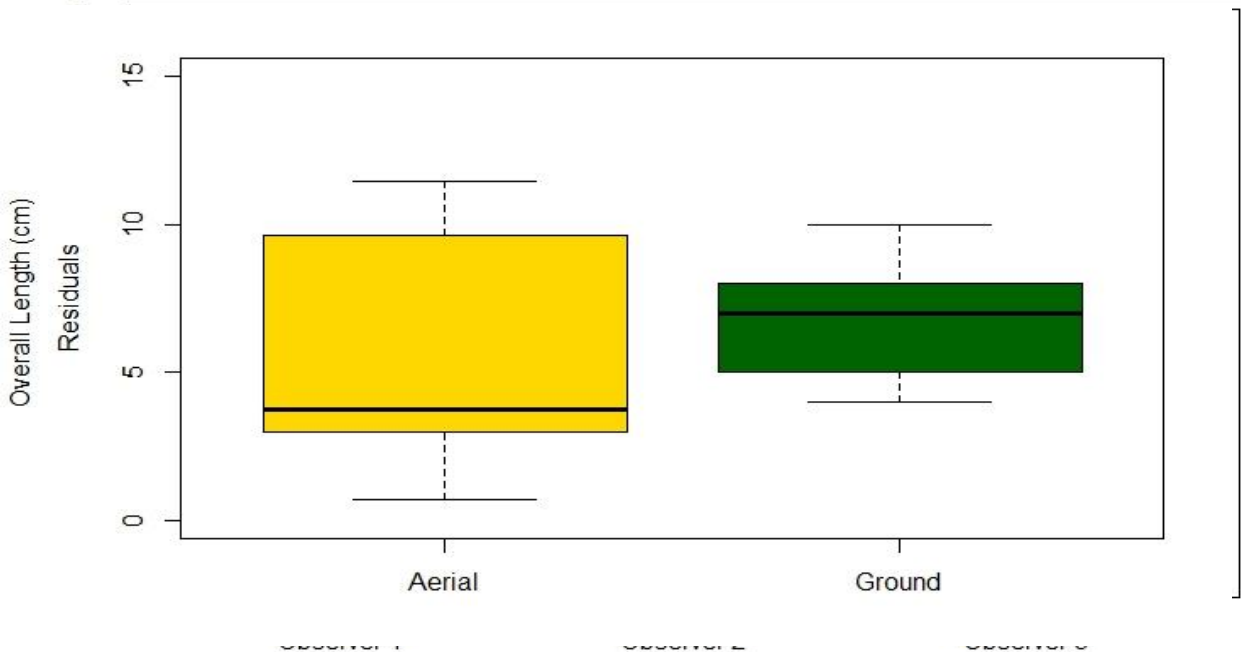
Precision



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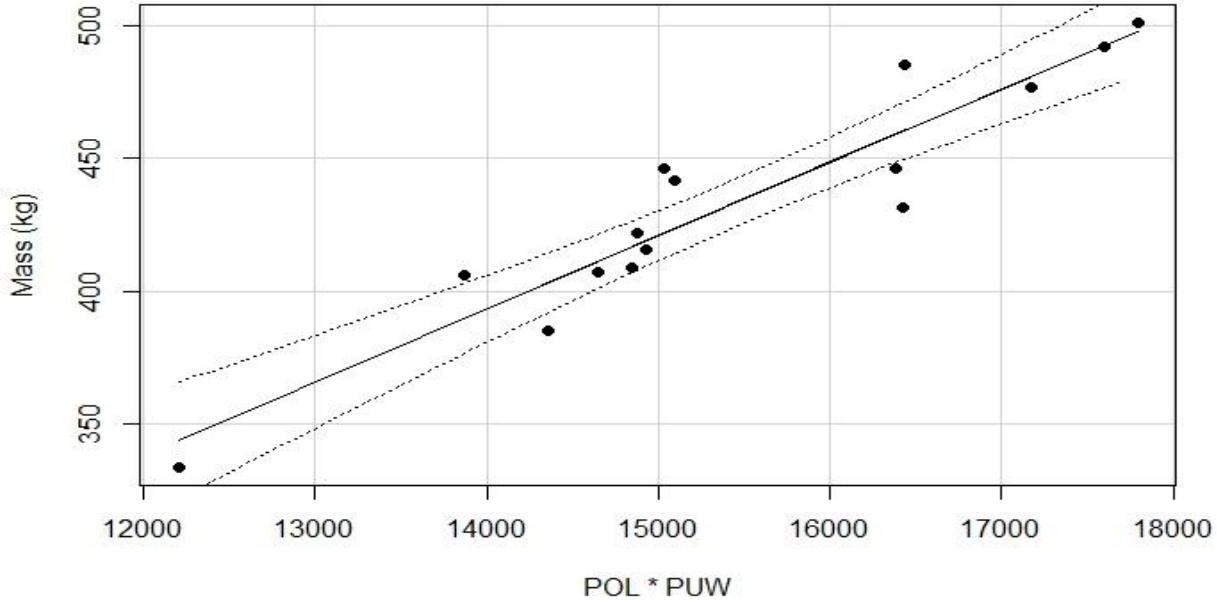
Mass Esimation



$R^2 = 0.870$
$P << 0.0001$

Residual Error = 16 Kg
(3.6% on a 440 kg seal)

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Questions?
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